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pidly out of sight, and when the rope of the harpoon was all drawn out, the boat to which it was fastened was dragged under water—the crew meanwhile having escaped to a piece of ice. When the whale returned to the surface “to blow,” it was killed, but immediately began to sink, which, being an unusual occurrence, excited some surprise. Scoresby, who was looking on, threw the noose of a rope round the tail of the animal, which nevertheless continued sinking, until stopped by the last mentioned rope, which, when all expended, was near pulling the second boat under water. Another rope was now let down, furnished at the extremity with a grapnel, which fortunately hooked the rope belonging to the harpoon. The harpoon now lost its hold in the whale, which thereupon rose rapidly to the surface, leaving the sunken boat in connexion with the hook and ropes: Scoresby at first thought that the boat was entangled among rocks at the bottom of the sea, but he soon found that, by the assistance of about twenty men, it admitted of being raised, without, however, any lessening in weight as it neared the surface of the water. When fully dragged up, it required a boat at each end to keep it from sinking again, and was, with much difficulty, got into the ship. It appeared as completely soaked in every pore as if it had lain at the bottom of the sea since the flood; and a fragment of it, when thrown into the water, sank to the bottom like a stone.

From this incident, as important as it is curious in demonstrating the force of pressure by which the wood in a few minutes became so impregnated with water as to acquire a weight like that of a stone, a long train of very interesting experiments to ascertain the exact ratio of the weight of the sea, at different distances from the surface, were instituted by Scoresby, and afterwards by Perkins, from which it appears, among other things, that the weight increases with the depth, and that at a perpendicular depth of 2110 yards, the pressure on a cube of wood, two inches in diameter, exceeds that produced by a weight of twenty tons.

The consideration of this fact, as applied to the question of pressure on the body of a whale, at the same depth, strikes us with astonishment; for, if a square surface of sixteen inches sustains, under such circumstances, a weight of twenty tons, what must be the degree of pressure exerted on the body of an animal sixty or seventy feet long, by thirty or forty in circumference.

Under such powerful causes, operating in arresting the circulation of the blood, terrestrial animals could never exist for so long a period, as it is well known those inhabiting the water are capable of. A whale can live without breathing for twenty minutes; the most expert diver has never been known to remain under water for more than two minutes. The provision which Dr. Houston pointed out as existing in those creatures in adaptation to the peculiar element in which they live, consists of large reservoirs in connexion with the veins leading to the lungs, where the obstruction occurs serving as temporary resting places for this fluid, in which it may remain for a time without bursting the vessels, or otherwise injuring the vital functions. A comparison drawn by Dr. Houston between the condition of the vessels in the gannet, which, though an aquatic bird, takes the fish on which it preys by pouncing on them when near the surface, and the diver which plunges after and seizes them deep in the water, afforded to the meeting a satisfactory illustration of the beauty and efficacy of the provision on which such differences in the habits of those birds depend.

After an interesting discussion, Dr. Jacob, in reference to Mr. Houston's theory, gave it as his opinion, that we must look for some other cause than that assigned by Mr. H., and this cause Dr. Jacob considered to be connected with the suspension of respiration. It would appear that the existence of cells was a provision to prevent the continuance of the circulation of venous blood during the suspension of respiration, which would otherwise pass through the lung without the advantages derived from being corrected by atmospheric air. It is, therefore, a provision in connexion with the respiratory function; and this is a proof that the circulation of venous blood is calculated to prove destructive to life; and, perhaps,

this is the reason for the existence of such a provision, more than the pressure on the surface. Dr. Jacob referred to the vast number of arterial ramifications which may be observed spreading up along the neck and thorax in diving animals, and first pointed out by Tyson and Hunter. These form a kind of arterial reservoir or diverticulum, a provision which, perhaps, may be made available when the blood cannot pass any further in the extreme vessels.

Dr. Williams, of London, Mr. Houston, and Mr. Corrigan having stated their sentiments on the question, Dr. Jacob observed that it was still open for discussion, whether the lung in these animals may not have the power of retaining air by compression, or some other means, and whether the tense structure and absence of porosity observed in their lungs, may not contribute to this.

ON MAKING PAPER FROM PEAT OR TURF.

In quoting into our pages, from the Report of the Proceedings of the British Association, the very clever, scientific paper, read by Mr. Robert Mallet, on producing paper from peat or turf, by a chemical process, we at the time neglected to make an observation with which we had intended to accompany it. We, therefore, again refer to the subject, as possessing considerable interest, and likely to be of much practical importance in this country. Indeed, we feel that Mr. Mallet deserves great credit for turning his attention to such practical subjects as those which he brought before the Association; and while large sums are voted by the Association to make experiments on theories, which, after all, may be of little practical importance, we cannot see why a subject such as that brought forward by Mr. Mallet, and which might prove of immense benefit to Ireland, should not be properly and fairly tested. We, therefore, respectfully submit to the Managing Committee of the British Association, that a better application of a portion of its funds could not be made than by placing it at the disposal of Mr. Mallet, to make further experiments, on a larger scale than he would perhaps be warranted in making, were they to be defrayed from his own private resources. If we are not mistaken, a sum little short of £1500 has been remitted to the Association from this country, after paying all expenses of the meetings here. We trust that some portion of this will be expended on investigations having reference to the good of the country in which it was raised.

THE MERCHANT'S DAUGHTER.

MR. EDITOR—Last autumn I passed some weeks with a Mr. Fitzmaurice, a retired merchant, whose abode was a suburban villa in our delightful environs. His attention was almost exclusively engrossed by his only child, a daughter; her mother had died while the little Isabella was yet an infant, but her surviving parent was determined that his own anxious care should fully make amends for the absence of the parent she had lost. Accordingly, he took care to have her trained in every accomplishment that fashion demanded; her time was passed chiefly in academies, and the intervals she spent at home were filled up with the drilling of governesses in every conceivable branch of ornamental instruction. Her progress was such as all these labours might lead one to expect, for she regularly carried off the prizes at all the annual and half-yearly exhibitions. Every one said she had attained perfection, and she modestly believed that what every one said must be true. At length her education was pronounced to be concluded, and she quitted the academy to preside at her father's table, with the aid of a female friend and of all her own accomplishments.

My visit took place shortly after Isabella's return from school. On the morning which followed my arrival I was seated in the drawing-room, with Isabella and her friend (Miss Singleton), when a britzka drove up, chariottered by a person whose appearance seemed quite to exaggerate the newest fashions. He handled the reins with scientific ease, a cigar protruded from each side of his mouth, his chevelure might have served Gioletti, the Parisian perruquier, for a model of elegance, and the fur on the breast, and cuffs, and collar of his coat, might well have raised the envy of a Russian bear. This exquisite personage

threw the reins to a servant, and dismounted from the vehicle, on receiving the pleasing announcement that Isabella and Miss Singleton were visible. His appearance was so foreign, that I felt some surprise when my hostess introduced him as the Honourable Captain Shuffleton. His attention seemed chiefly directed to Miss Singleton. I could not account for this preference, as Isabella possessed more of that description of attraction one might reasonably think would be most likely to fascinate the honorable visitor. He soon became so deeply engrossed with Miss Singleton, that Isabella, who was standing with me at the door of a conservatory, took an opportunity of asking if I thought him handsome.

"I can't say. Perhaps, as the Duchess of Abrantes said of Murat—he may be allowed the possession of as much beauty as may appertain to plumes, curls, and embroidery, but certainly no more. For embroidery read fur in the present instance: our friend seems equipped for polar seas. But, pray, whose son is he?"

"He is the son of the Honorable Mrs. Shuffleton."

"And does he not call himself 'honorable'?"

"Yes," said Mr. Fitzmaurice, "and everybody laughs at him for it, but his foppery prevents him from perceiving the ridicule."

"He is really unique."

"He's a dashing, pleasant, fashionable fellow, and one doesn't like to give him up," replied Fitzmaurice; "besides, he's well connected—and though I've rejected the fellow as a suitor for Bella here, yet I've given him permission to continue his visits, on condition of his not renewing his addresses. He pledged me his honour at once, with military frankness. Poor fellow, he hasn't got the cash—a pity—a great pity—for he's a fine fellow, too, in some things. And, besides, (here his voice was lowered to the confidential whisper,) I intend Bella for my cousin, Harry Fitzmaurice, who will succeed to all my business."

Time rolled on, and the "Honorable" Captain Shuffleton still continued his visits. It chanced one day that Mr. Fitzmaurice mentioned having received a letter, announcing the speedy return of Henry. Captain Shuffleton, notwithstanding his fashionable non-chalance, seemed rather uneasy at receiving this intelligence.

Cousin Henry was destined, as Mr. Fitzmaurice had mentioned, to be his assistant, and, finally, his successor in business. On enquiry, I learned that his manners and attainments were pleasing and creditable, although I could gather, from the fair Isabella's reserve, that Henry's deplorable deficiency in curls, fur, and cigars, decreased the scale considerably in the Honourable Captain's favour.

"Pray, Isabella, what are your plans for to-day?" inquired her father, vacantly.

"I must go into town, papa."

"Must, Isabella? What is the necessity?"

"A pressing one, papa, I assure you."

"Very well; I shall inquire no further," replied her accommodating parent, with a satisfied air; "have consultation, I suppose, with your *marchands de modes*."

Isabella looked slightly embarrassed, but shortly left the room, and, in a very few minutes, drove away in her carriage to Dublin.

To while away the hours of her absence, my friend proposed a visit to Powerscourt; I acquiesced. We roamed for some hours through the lovely scenes of Wicklow, and returned a little before dinner time.

"Has Miss Fitzmaurice yet returned from town?" asked Mr. F.

"No, Sir," replied her soubrette, a saucy looking Abigail.

"When do you think she will return?"

"Law, Sir, how do I know? I don't keep my missis's motions in my pocket, I'm sure. She said she had petticoat business."

"Shall dinner be served, Sir?" asked the butler.

"Why, ay—no—though I believe we must be satisfied to dine without Isabella."

"Pray, Sir," said I, "is she in the habit of going into town and remaining so late?"

"Not exactly, though sometimes it has happened."

We dined, we sipped our café, we slept, we rose and breakfasted, but yet no Isabella; her father became uneasy—"I must see after that girl—she may have met with some accident."

While Mr. Fitzmaurice thus talked, a carriage drove up to the door; a gentleman sprang out.

"Ah, here is Henry!" exclaimed my host.

A lady followed—it was Isabella. In a moment she was clasped in the arms of her father, and weeping on his neck.

"What can all this scene be for?" thought I.

The explanation was subsequently given me by a confidential friend. Miss Singleton had conspired, with the "Honorable" Captain Shuffleton, to persuade Isabella to marry him. They consented to delay the nuptials in the prudent hope of obtaining papa's consent, but cousin Henry's unexpected return precipitated measures. Miss Singleton's secret object was to secure cousin Henry to herself; a purpose she sagaciously expected to advance by removing Isabella from his reach, by the marriage of the latter with the plumed and whiskered Shuffleton. Isabella's visit to Dublin, the preceding morning, had been undertaken in compliance with a hymeneal appointment she had made with her military friend. Their appointed rendezvous was a fashionable hotel, where some unlooked-for delay was occasioned, by discovering that the reverend person, who had promised to perpetrate the ceremony, was not yet in marching order. During this delay, cousin Henry (who had just arrived from France) came out of an adjoining room, caught a glimpse of Isabella, whom he recognised at once, and, suspecting mischief from the confidential terms on which she seemed to be with Captain Shuffleton, immediately accosted her. Her manifest confusion confirmed his suspicion into certainty; and in Shuffleton he recollected an accomplished frequenter of certain Parisian gambling tables, who had made a sudden exit from the French metropolis, under rather dubious circumstances. Impelled by his duty to his friend, he rescued Isabella, and insisted on her instantly returning to her father. Captain Shuffleton vanished; it was not precisely known whether in a terrestrial or supernatural manner. On inspecting his apartment, a potent perfume of cigar smoke was strongly perceptible, in which some lovers of the marvellous asserted that he must have evaporated. Their surmise, however, has been very satisfactorily refuted, by the Honorable Captain's subsequent corporeal appearance at several fashionable balls.

As Fitzmaurice gazed, with a mixture of fondness and sorrow, on his recovered daughter—"Who," he asked me, in a whisper, "could suspect so lovely a being of taking such a step?"

"Why," said I, "you attended so much more to the education of her fingers and her feet than to that of her heart and head, that her late attempt does not astonish me. You know I have always hated this elaborate attention to external display, which seems the sole object of modern education. You know, too, how inveterately I hate always *laced* waiting. When a girl has attained Isabella's unrivalled perfection in the

Waltz step,

We marvel not to see her take a false step."

AN OLD BACHELOR.

THE PATH TO HAPPINESS.

In the pursuit of the numerous passions which influence the various actions of the human race, no subject is more replete with materials for contemplation than that of examining the different objects to which different men apply, as a synonyme, the name of happiness. The miser's happiness consists in hoarding wealth, the spendthrift's in squandering what the miser has amassed; the warrior's in victory, the churchman's in a mitre, the pleader's in the ermine, the author's in a name. Our present design, however, is not to enumerate the objects, but to prove that the name of happiness is often inappropriately applied. While investigating the various paths which different men adopt in their pursuit